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A1 This patent document is a continuation claiming the benefit of the U.S. Patent Application, Serial Number 08/924,519; filed on September 5, 1997. ^{US Patent 6,200,287 B1.}

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5/1/03

In the Claims:

1. (Amended) A method for extracorporeal collection of blood components from a donor/patient, comprising:

flowing blood into a blood processing vessel for continuous blood processing;

separating platelets from said blood within said blood processing vessel;

[collecting at least a portion of said platelets in a platelet collection reservoir separate from said blood processing vessel;]

separating red blood cells from said blood within said blood processing vessel

^{new} continuously with said step of separating platelets;

collecting at least a portion of said separated red blood cells in a red blood cell collection reservoir separate from said blood processing vessel, wherein said platelet separation [and collection] step[s are] is completed [separate from] continuously with said red blood cell separation and collection steps.

2. (Amended) A method as recited in Claim 1, wherein said method [platelet separation and collection steps are] is completed prior to said red blood cell separation and collection steps] further comprises establishing an AC ratio of between about 6 and 16.

3. (Amended) A method as recited in Claim 1, wherein prior to said red blood cell [separation and] collection step[s, and separate from said platelet separation and collection steps], said method further comprises a red blood cell collection set-up phase including: [separating red blood cells from said blood within said blood processing vessel;]

establishing [an AC ratio in the blood processing vessel of between about 6 and 16 and] a packing factor of at least about 11 within separated red blood cells within said blood processing vessel.

4. (Amended) A method as recited in Claim 3, wherein said packing factor is established to be about 13 [, and wherein said AC ratio is established to be about 8] .

5. (Amended) A method as recited in Claim 3, wherein an AC ratio is established to be between about 6 and 16 [said set-up phase further including:

flowing blood components out of said blood processing vessel, wherein substantially all of said blood components flowing out of the blood processing vessel are accumulated for infusion to a donor/patient] .

6. (Amended) A method as recited in Claim 3, wherein an AC ratio is established to be about 8 [further comprising:

removing said blood from a donor/patient through a single needle;
returning uncollected components of said blood to said donor/patient through said single needle] .

7. (Amended) A method as recited in Claim 1 [6] , said set-up phase further including:

flowing separated blood components out of said blood processing vessel, wherein substantially all of said separated blood components flowing out of the blood processing vessel are accumulated for infusion to a donor/patient for at least a first volume of said blood processing vessel [wherein said removing and returning steps are alternately and repeatedly performed during corresponding blood processing and blood component return modes, respectively] .

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- no setup phase in claim 1

8. (Amended) A method as recited in Claim 7 [6], wherein [during said platelet separation and collection steps], said set-up phase of said method further comprises:

[recirculating a portion of said uncollected blood components into said blood processing vessel; and,

wherein during said red blood cell separation and collection steps, said method includes:]

returning substantially all of said [uncollected] separated blood components to said donor/patient for at least two volumes of said blood processing vessel. — draws

AZ 9. (Amended) A method as recited in Claim 3, wherein said blood is flowed into said blood processing vessel at a flow rate, and said establishing step of said set-up phase comprises:

reducing said flow rate.

10. (Amended) A method as recited in Claim 3, wherein said blood processing vessel is rotated at an rpm rate, and wherein said establishing step of said set-up phase comprises:

increasing said rpm rate.

11. (Amended) A method as recited in Claim 3, said establishing step of said set-up phase further comprises [including] :

maintaining a predetermined anticoagulant infusion rate to said donor/patient.

12. (Amended) A method as recited in Claim 3, said establishing step of said set-up phase further comprises [including] :

continuously removing platelets [and plasma together] through a [common] platelet port from said blood processing vessel.

13. (Amended) A method as recited in Claim 1, wherein during said platelet separation [and collection] step[s] and during said RBC separation and collection steps said method further comprises:

continuously separating plasma from said blood within said blood processing vessel;
[collecting] continuously removing at least a portion of said separated plasma [in]
through a plasma port from said blood processing vessel [collection reservoir] .

14. (Amended) A method as recited in Claim 1, wherein during said platelet separation step and said red blood cell separation and collection steps , said method further comprises:

establishing a blood component interface between separating blood components within said blood processing vessel, said interface including a red blood cell component disposed in a radially outwardmost disposition, a buffy coat component including a platelet component adjacent said red blood cell component, and a plasma component disposed in a radially inwardmost disposition adjacent said buffy coat component

[separating plasma from said blood within said blood processing vessel;
collecting at least a portion of said separated plasma in a plasma collection reservoir] .

15. (Amended) A method as recited in Claim 14 [1] , wherein said blood processing vessel further comprises [ing]:

a red blood cell outlet port for continuously removing said red blood cell component from said blood processing vessel

[adding a storage solution to said red blood cells collected in said red blood cell collection reservoir] .

16. (Amended) A method as recited in Claim 15, wherein said blood processing vessel further comprises a platelet outlet port for continuously removing said platelet component from said blood processing vessel [storage solution is added through an assembly having a sterile barrier filter] .

17. (Amended) A method as recited in Claim 16 [1] , wherein said blood processing vessel further comprises [ing] :

a plasma outlet port for continuously removing said plasma component from said blood processing vessel [leukoreduction filtering of said red blood cells collected in said red blood cell collection reservoir].

18. (Amended) A method for extracorporeal collection of blood components from a donor/patient comprising:

removing blood from a donor/patient through a single needle;

continuously flowing said blood into a blood processing vessel;

continuously separating platelets from said blood within said blood processing vessel;

[collecting] continuously flowing at least a portion of said platelets [in] out of said blood processing vessel through a platelet [collection] outlet line [reservoir separate from said blood processing vessel];

continuously separating red blood cells from said blood within said blood processing vessel;

[collecting] continuously flowing at least a portion of said separated red blood cells out of said blood processing vessel through [in] a red blood cell outlet line [collection reservoir separate from said blood processing vessel,] wherein said platelet separation and [collection] flowing steps are completed [separate from] simultaneously with said red blood cell separation and [collection] flowing steps;

collecting red blood cells in a red blood cell collection reservoir [returning uncollected blood components of said blood to said donor/patient through said single needle] .

19. (Amended) A method as recited in Claim 18, further comprising:

continuously separating plasma from said blood within said blood processing vessel;

[collecting] continuously flowing at least a portion of said plasma [in] out of said blood processing vessel through a plasma outlet line [collection reservoir separate from said blood processing vessel], wherein said plasma separation and [collection] flowing steps are completed at least partially contemporaneous with said platelet separation and [collection] flowing steps.